Turning Up the Heat to Save Energy: Scottrade's overcooled data center was a resource drain. PAGE 28

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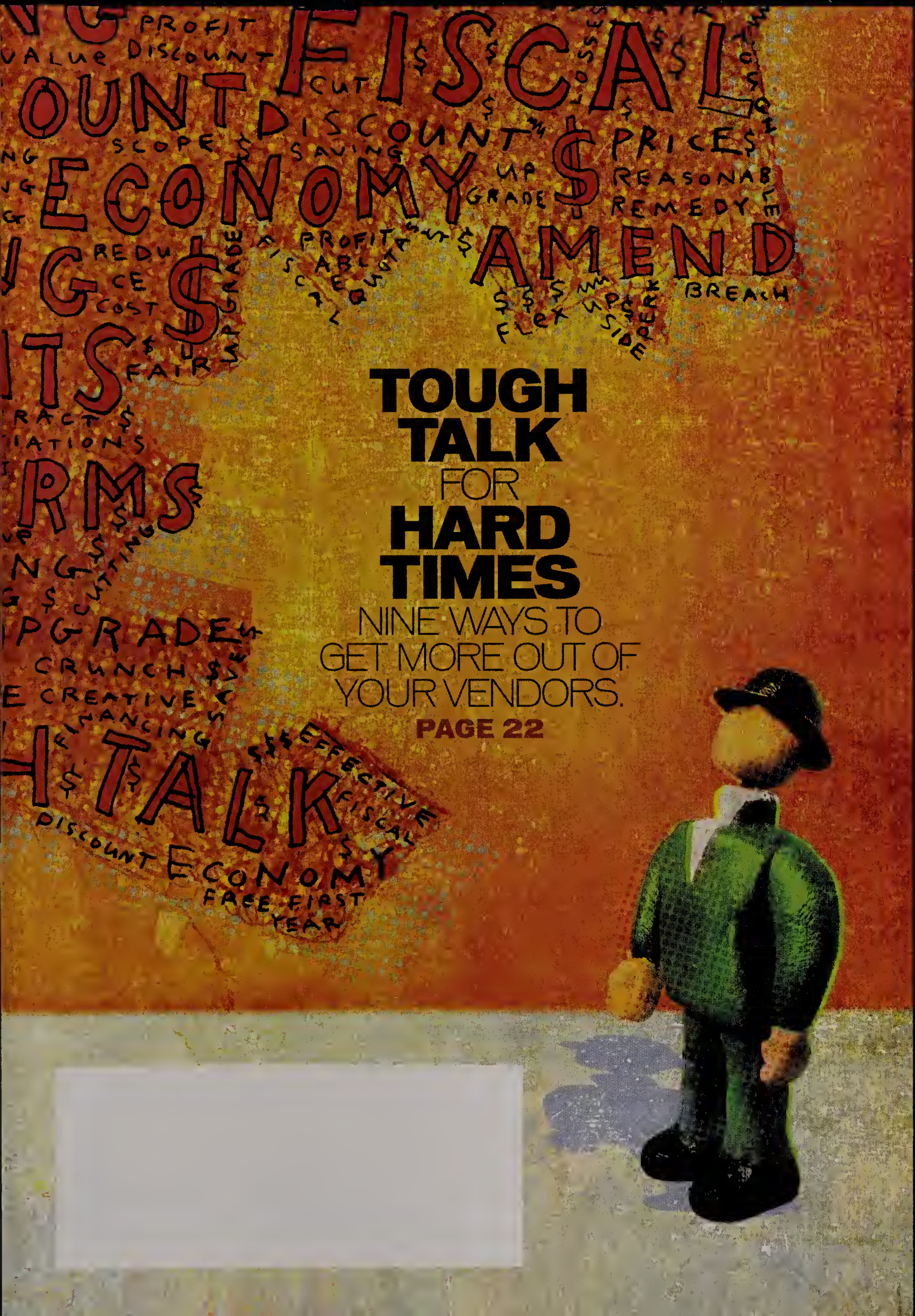

TOUGH TALK FOR HARD TIMES

NINE WAYS TO GET MORE OUT OF YOUR VENDORS.

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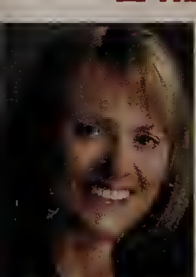

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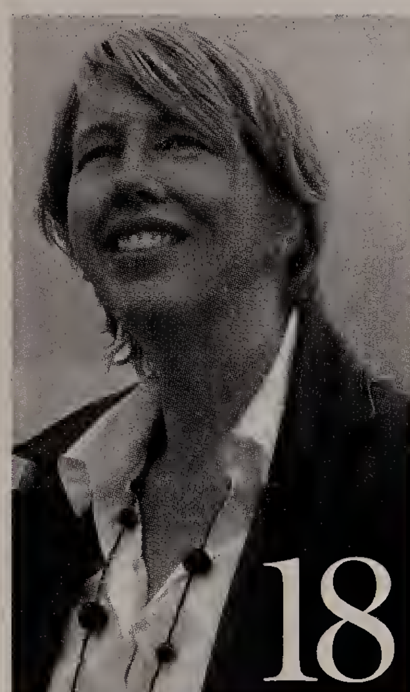

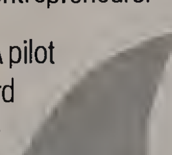

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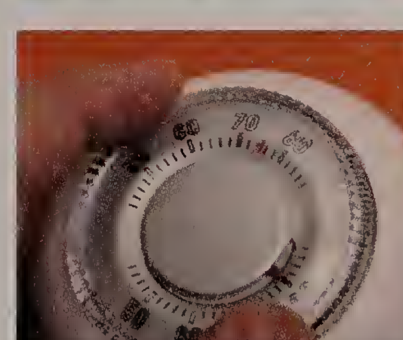
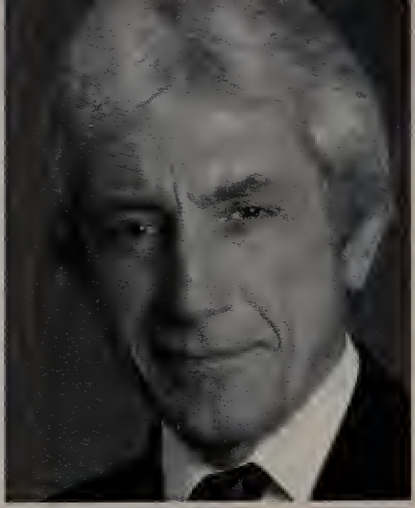


COVER ILLUSTRATION BY RICHARD BORGE

■ EDITOR'S NOTE

Don Tennant



The Other Casualty

AS EACH DAY PASSES, more lives are being forever changed. The economic downturn is claiming almost overwhelming numbers of human casualties, creating devastating losses for families all over the world. The toll in terms of livelihoods lost is staggering.

But another casualty that's less immediate, but increasingly worrisome, is the loss in opportunities for the sharing of knowledge and experience.

Last October, I wrote about the emergence of university degree programs in IT service management and why I saw that as a welcome development. I singled out Carnegie Mellon University, which had announced in July that its School of Computer Science would offer a degree called a Master of Science in Information Technology in IT Service Management (MSIT-ITSM) beginning in the fall term. Unfortunately, as I learned last week, that program never really happened.

A notice posted on the MSIT-ITSM Web site on Dec. 23 states, "The MSIT in IT Service Management announced by the School of Computer Science will not be offered in the Fall of 2009, given the current global economic and financial crisis. Any decisions about offering a program in the future will be reconsidered at a later date."

According to Bill Hefley, director of the MSIT-ITSM program, the decision was made by Randy Bryant, dean of the School of Computer Science. Bryant had informed Hefley and his colleagues of the cancellation on Dec. 5.

In truth, the program never even got off the ground. It wasn't offered this fall after all because, Hefley said, approvals came too late. He noted that he and his colleagues are teaching "a number of the planned courses, drawing on students from across campus interested in the topics."

But not even that is likely to continue, because Hefley and several other faculty members will no longer be at CMU after this year. "The official line is that we were not laid off, but that our appointments lapsed," Hefley explained. Like many others associated with the IT profession, Hefley is looking for a job.

■ The abortion of the MSIT-ITSM program at CMU is symptomatic of an unhealthy loss of knowledge-sharing opportunities.

The abortion of the MSIT-ITSM program and the de facto layoffs at CMU are symptomatic of an unhealthy loss of both promising and established knowledge-sharing opportunities. Earlier this month, the SageCircle analyst relations blog broke the story that Gartner is canceling its spring Symposium/ITxpo conferences slated for Las Vegas and Barcelona in May.

"While a number of factors influenced this decision, the primary reason for the change is the current macro-economic environment and its anticipated impact on attendee travel and overall event attendance," Gartner said in a statement to SageCircle. Gartner also informed the SEC that it was laying off 117 employees, or 3% of its workforce, but it's unclear whether any of the layoffs are attributable to the Symposium/ITxpo cancellations.

And then there was Novell's announcement last month that it was canceling its 2009 BrainShare user and partner conference. Last week, I asked John Dragoon, senior vice president and chief marketing officer at Novell, how many Novell employees were laid off as a result of the cancellation.

"Zero," Dragoon replied, noting that the event was canceled because of cuts in customer travel budgets. "Registration was tracking below 50% of normal, and we were prepared to scale the event back to an equivalent cost to Novell but decided to cancel for this year and investigate alternate methods to deliver the information and training our customers and partners are seeking," Dragoon said. "Employees who were working on BrainShare are now working on these alternatives," which will include online classes, virtual conferences and local tours.

That's certainly encouraging. It's essential that innovative alternatives to cost-prohibitive academic and commercial knowledge-sharing are found so that the knowledge continues to be imparted and shared. Lost opportunities to gain knowledge will only exacerbate the problem of lost jobs. ■

Don Tennant *is* Computerworld's senior editor-at-large. *You can contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

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ONLINE CHATTER

RESPONSES TO:

The 9 Hottest Skills for '09

Jan. 1, 2009

I think the hot skills will be IT positions that require face-to-face contact, i.e., program managers, business analysts, help desk. SAP work is heavily outsourced right now, so it will be difficult to get into. SAP is a specialized skill, so once your skill set is SAP, you better pray the company keeps going until you retire.

Submitted by: *Anonymous*

RESPONSE TO:

Won't, but Should

Jan. 5, 2009

Another reason power consumption won't drop appreciably in the average data center is that the ROI isn't there soon enough to make it a priority in today's economy.

As much as I want to consign it to the junk heap, my aging Exchange server is safe in its rack mounts for time being. There's a decent business case for replacement, but it isn't a project that's going to make it to the capital outlay list in this environment.

I think we may see a drop in average consumption, as components added have higher efficiencies — but I expect that few systems will be retired and replaced on energy grounds alone, and I expect that most inefficient systems will remain in service until business has no other choice than to replace those systems or the economy turns around.

Submitted by: *pet geek*

RESPONSE TO:

IT Execs Losing Ground on Compensation, Salary Study Says

Jan. 5, 2009

Of course they are. With the open-source movement, everyone expects IT to be free. You reap what you sow.

Submitted by: *Anonymous*

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UI Goodies in Windows 7 Beta 1

Fast and stable, the beta release of Windows 7 unveils some intriguing user-interface improvements, including the much-anticipated new taskbar.

10 Outlook Fixes

REVIEW: Microsoft Outlook drives a lot of users crazy in a variety of ways – from sluggish performance and massive bloat to corrupt .pst files and constant crashes. Here are 10 tips to make Outlook less annoying.

The Satyam Fraud's Fallout

OPINION: The financial fraud perpetrated by Satyam Computer Services executives could have far-reaching effects on IT outsourcing, says Shaalu Mehra, chairman of the outsourcing and India practices at law firm Perkins Coie.

Pushing the Linux Envelope

HANDS-ON: Popular Linux distributions Fedora, openSUSE and Ubuntu feature upgrades that will appeal to new users and long-term enthusiasts alike. We review each one and provide video run-throughs.


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News Digest

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THE WEEK AHEAD

MONDAY: The Lotusphere 2009 conference, focusing on IBM's Lotus software products, opens in Orlando.

TUESDAY: IBM plans to report its Q4 financial results. Also scheduled to file earnings reports this week are Apple on Wednesday and Microsoft, Google and AMD on Thursday.

THURSDAY: The Social Networking Conference opens in Miami. The agenda includes sessions on topics such as business strategies and revenue models for social networks.

NETWORKING

Nortel: Bankruptcy Move Protects Cash for Support

WHEN Nortel Networks Corp. filed for protection from creditors in the U.S. and other countries last week, one of the telecommunications equipment vendor's primary goals was to preserve a cash holding of $2.4 billion, which it plans to use to provide ongoing support to customers.

The $2.4 billion "is an important number to understand," said Joel Hackney, president of Nortel's enterprise solutions unit. "That money allows us to deliver products we have committed to customers and [continue] product support."

Hackney said that as soon as the bankruptcy filings were announced, he called the CIOs at Nortel's five largest customers to explain the move. "They're savvy, and they get it," he said.

IT managers who might consider switching to rival vendors should look at why they chose Nortel in the first place, Hackney added. "I'm absolutely convinced that our value proposition only gets stronger with the financial protections," he said.

Nortel has debts of about $4 billion and was due to make a $107 million bond payment last week. CEO Mike Zafirovski said in a statement that the bankruptcy filings would enable the company to restructure and narrow its focus.

The International Nortel Networks Users Association, a Chicago-based group with about 4,000 members, issued a statement saying that the filings will give the vendor "an opportunity to truly focus on strengthening" its financial position.

"Chapter 11 is simply a restructuring tool, and Nortel is not going away," Victor Bohnert, the INNUA's executive director, said in an interview.

Nortel's filings "give me no pause at all," said Pierre-Eric Belzile, executive director of information and communication technology for the Montreal Canadiens hockey team. "I'm a big user and a big supporter."

The Canadiens recently installed IP phones from Nortel, and the team uses the vendor's gear to support a ticket-sales call center and the ticket-scanning system at the Bell Centre, its rink.

Zeus Kerravala, an analyst at Yankee Group Research Inc., said Nortel might not have had to seek protection from its creditors if the economy hadn't soured so sharply. But he gave the company a rating of just 4, on a scale of 1 to 10, for its technology innovation. "Where," he asked, "can Nortel lead?"

— Matt Hamblen

A New Chapter

- Nortel filed for Chapter 11 protection in U.S. Bankruptcy Court in Delaware and also sought protection from creditors in Canada.
- Some of its European subsidiaries are expected to file for protection as well.
- Nortel said it has "confidence" that Flextronics International Ltd. will continue to manufacture products for it on a contract basis.

"Nortel must be put on a sound financial footing once and for all.

MIKE ZAFIROVSKI,
THE VENDOR'S PRESIDENT AND CEO

INTERNET

Judge Allows Web Streaming In RIAA Case

Internet users will have the unusual opportunity on Thursday to view a federal-court hearing in a music piracy lawsuit filed by the Recording Industry Association of America against a Boston University graduate student.

U.S. District Judge Nancy Gertner last week authorized the Courtroom View Network to send a live video feed of the hearing to Harvard University's Berkman Center for Internet & Society. The center, in turn, will stream the video on its Web site.

The RIAA argued that the streaming could prejudice potential jurors – a claim that Gertner labeled "specious." However, she limited the streaming to this week's hearing, saying she would later decide whether to allow it in subsequent proceedings.

- JAIKUMAR VIJAYAN

Charles Nesson, a Harvard professor representing the defendant, asked for the live streaming so Web users could 'see what's at stake' in the case.

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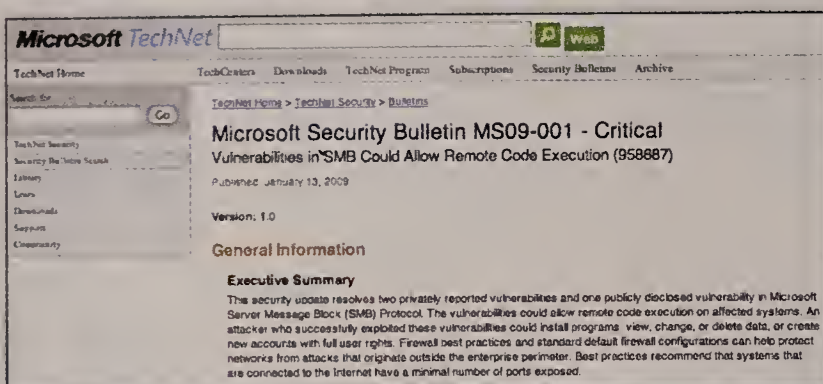
SECURITY

Microsoft Issues Patches For 'Nasty' Windows Bugs



MICROSOFT CORP. last week patched three vulnerabilities in the Server Message Block (SMB) file-sharing protocol in Windows, including two that could make "Swiss cheese" out of enterprise networks, according to one researcher.

"This is super nasty," said Eric Schultze, chief technology officer at Shavlik Technologies LLC, a St. Paul, Minn.-based maker of patch management tools.

Microsoft rated two of the bugs as "critical" and the third as "moderate." Schultze said the critical bugs are extremely dangerous because attackers can exploit them by simply sending malformed data to unpatched machines.

Microsoft patched flaws that threaten enterprise networks.

Andrew Storms, director of security operations at nCircle Network Security Inc., speculated that the latest bugs were found by researchers using information disclosed in SMB fixes Microsoft released in October and November.

Microsoft last week also issued the first patch for the Windows 7 operating system beta it had released days earlier. That update fixes a flaw that shaves several seconds of audio from any edited MP3 file.

Microsoft acknowledged that it did not fix a known vulnerability in the SMB in Windows 7. A spokesman said the bug will be fixed in "the next public release for Windows 7."

The latest update also didn't include a SQL Server patch that was expected by some researchers.

Microsoft last month said that older versions of its SQL Server database contained a critical vulnerability and that attack code had been released. "I'm not sure what's happening. Until last week, we were all geared up for that fix," said Wolfgang Kandek, CTO at Qualys Inc.

Meanwhile, F-Secure Corp. said that a worm that exploits a months-old Windows bug infected more than a million PCs in a 24-hour period last Tuesday and Wednesday. Overall, the security firm estimates that 3.5 million PCs have been compromised by the "Downadup" worm.

Based on scans of several hundred thousand Windows PCs, Qualys concluded that about 30% have not been patched. Microsoft, along with researchers at firms like Symantec Corp. and Panda Security, blamed lackadaisical patching for the infections.

— Gregg Keizer

Short Takes

Dell Inc. has agreed to pay $3.85 million to 46 states to settle complaints that it used deceptive sales practices. The company did not admit wrongdoing but agreed to pay $1.5 million to customers. It will use the remaining $2.35 million to reimburse the states for legal costs.

Seagate Technology LLC announced that it is replacing CEO William Watkins with Chairman Stephen Luczo. Watkins, who had succeeded Luczo as CEO in July 2004, will remain at the company to help with the transition.

As expected, **Intel Corp.** reported that its fourth-quarter profit plunged 90% to $234 million. The Atom chip was a bright spot; its sales were up 50% over the third quarter, to $300 million.

Motorola Corp. said it plans to lay off 4,000 employees, mostly from its mobile device business, in addition to the 3,000 layoffs announced previously. The company also said that its fourth-quarter results will fall short of analysts' estimates.

SOFTWARE

Jeweler Cites SAP Project In Its Bankruptcy Filing

AN ENGLEWOOD, Colo.-based jewelry retailer said that cost overruns and functionality issues related to an SAP software implementation were partially to blame for its move last week to file for Chapter 11 bankruptcy protection.

Shane Co. did note in papers filed with the U.S. Bankruptcy Court in Denver that the move was mostly due to a "precipitous decline in retail sales, particularly in luxury goods," during the current recession.

Shane agreed in 2005 to buy a "sophisticated point-of-sale and inventory management system" from SAP AG that would cost $8 million to $10 million and could be rolled out within a year. The rollout took 32 months and cost $36 million, it said.

Inventory app snafus contributed to Shane's financial woes.

When employees started using system in September 2007, it "did not yet provide accurate inventory count numbers," and the stores became "substantially overstocked," Shane said.

The SAP system "became stable and functional" toward the end of 2008 but still doesn't deliver "the full functionality originally contracted for," the filing said.

In separate statements, Shane and SAP said they continue to have a strong working relationship. SAP said it believes "the bankruptcy filing inaccurately summarizes the implementation and cast SAP in an unfair light."

– CHRIS KANARACUS, IDG NEWS SERVICE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■ NEWS DIGEST

OUTSOURCING

Wipro Preceded Satyam on World Bank's IT Blacklist

IN 2000, IT services firm Wipro Technologies gave senior IT staffers at The World Bank Group a chance to buy stock in parent company Wipro Ltd. under a family-and-friends program, as part of an IPO in the U.S. Bank employees bought about 1,750 shares, paying a total of $72,000.

Nine years later, on Jan. 11, the Washington-based World Bank disclosed that Wipro is on a blacklist of companies barred from receiving new contracts. The financial institution said it imposed the four-year ban on the company in June 2007 for "providing improper benefits to bank staff."

The Wipro disclosure followed an announcement last month that the World Bank had put another India-based outsourcer, Satyam Computer Services Ltd., on its vendor blacklist in September. Satyam, which has since been hit by an accounting scandal, has been banned for eight years, for the same reason as Wipro and for not being able to document fees charged by subcontractors.

A World Bank spokesman said last week that the bank publicly announced the Satyam ban after seeing remarks by a company official denying that the outsourcer was on the blacklist.

The bank subsequently decided to identify all of the companies on the list "in the interest of fairness and transparency," according to the Jan. 11 announcement.

Wipro defended the stock-purchase offer to World Bank employees. Girish S. Paranjpe, one of the two joint CEOs of Wipro Technologies, described the offer as "a goodwill gesture."

Peter Brudenall, an attorney at Hunton & Williams LLP in London, said the cases of Satyam and Wipro are likely isolated examples, not an indication that there's something fundamentally wrong with India's outsourcing industry. But, he added, the Indian government should require companies to provide more transparent views into their financial records.

— Patrick Thibodeau

BETWEEN THE LINES

By John Klossner

BENCHMARKS LAST WEEK

Apple Inc. CEO Steve Jobs said he is taking a leave of absence through June to deal with health issues that are "more complex" than he initially thought. Jobs disclosed Jan. 5 that he has a "hormone imbalance."

Because of the recession, **Gartner Inc.** said it is canceling the spring editions of its Symposium/ITxpo that were scheduled for May in Las Vegas and Barcelona.

[illegible] **The TJX Companies Inc.** disclosed a security breach that it later said resulted in the theft of 45.6 million payment card numbers over 18 months.

Global Dispatches

Vietnam Pushes Open-Source Apps

HANOI, Vietnam – The Vietnam Ministry of Information and Communications last week mandated that government agencies start installing open-source applications such as OpenOffice.org and the Firefox browser by the end of June.

According to VietnamNet, a government-owned news service, at least half of the employees in each government agency should have access to some open-source programs by the June deadline.

Vietnam is aiming for all employees to be trained to use the applications by the end of 2010.

In recent years, Vietnam has put a priority on promoting the use of open-source software with an eye toward halting the use of pirated software and developing its own software outsourcing industry.

Jeremy Kirk,
IDG News Service

Barclays to Cut 400 More IT Jobs

LONDON – Barclays PLC last week said it plans to trim more than 400 IT staffers in addition to the 1,800 layoffs announced last July. The financial services firm blamed a tough economy that continues to squeeze U.K. banks.

The company said that it plans to cut 158 permanent jobs and 250 contractor positions over an unspecified period. A spokesman said that the affected posts duplicated other roles or had become obsolete.

The latest layoffs will come from the bank's global infrastructure and service delivery wing. The company said the affected jobs will not be moved offshore.

Leo King,
Computerworld U.K.

BRIEFLY NOTED

For the second time, Infosys Technologies Ltd. has lowered its revenue forecast for the fiscal year ending March 31. The Mumbai-based outsourcer is now projecting that fiscal 2009 revenue will range from $4.67 billion to $4.71 billion, for a year-to-year increase of 11.8% to 12.8%.

John Ribeiro,
IDG News Service

Bartz Looks To Revive Struggling Yahoo

Analysts say that the new CEO could rekindle talks with Microsoft. **By Sharon Gaudin and Stephen Lawson**

ALTHOUGH new Yahoo Inc. CEO Carol Bartz lacks consumer Internet experience, analysts say her forceful style should serve the struggling Internet pioneer well.

"A lot of people have been surprised, but I think she's a tremendous choice," said David Card, an analyst at Forrester Research Inc.

"Being a CEO is about strategy, executing big-picture stuff and raising capital. Whether she's an Internet person isn't the issue. She's in the top quintile of CEOs — the top 20%," Card added.

Bartz joined Yahoo early last week after a long stint atop Autodesk Inc., a maker of design software.

She replaces Yahoo cofounder Jerry Yang, who stepped down last November after Microsoft Corp. ended its effort to buy the Sunnyvale, Calif.-based firm. Yang was also at the helm during the breakdown of an online advertising deal with Google Inc., and two rounds of layoffs.

Yang will reassume his former post of "Chief Yahoo" and remain on the company's board. Bartz applauded Yang's continuing role in the company. "No one knows more about Yahoo than Jerry," she said.

The company also announced that Sue Decker, a close supporter of Yang who had been a candidate for the CEO position, has resigned as president of Yahoo.

In a press briefing, Bartz said she plans to talk to employees, customers and investors as she develops a rebound strategy.

She wouldn't say how long it will take to develop that plan. "Let's not put ourselves on some crazy timeline. Let's let this process evolve," she said.

In general, though, she said that Yahoo should focus on being the top company in all of its markets and on creating new geographic and vertical businesses.

"I wouldn't have taken the job if I didn't believe there's a huge opportunity here," Bartz added. "I just see this as a company with enormous assets that, frankly, could use a little management."

Dan Olds, an analyst at Gabriel Consulting Group Inc., speculated that the change in leadership could lead to a resumption of talks between Yahoo and Microsoft about a merger or other arrangement.

"I would expect her to take a hard look at a potential deal and evaluate it on its business merits," he added. The previous management team, he said, appeared "much more interested in remaining independent from Microsoft at all costs."

OPPORTUNITY REVISITED

In early May, Microsoft broke off negotiations to buy Yahoo, contending that the Internet firm had overvalued itself. A month later, Yahoo ended talks about a narrower deal in which Microsoft sought to purchase the Yahoo search engine.

Gartner Inc. analyst Neil MacDonald said that an agreement with Microsoft could help the new CEO implement her plan.

"From a search perspective, Microsoft needs Yahoo and Yahoo needs Microsoft if they are to create a credible alternative to Google," he said in an e-mail. "An infusion of cash from Microsoft could enable the new CEO to reinvigorate the Yahoo brand and properties."

On the other hand, Greg Sterling, an analyst at Sterling Market Intelligence, said he expects Bartz to maintain Yahoo's independence for as long as possible.

"It's not a given she'll sell the business," he said, noting that comments Bartz made during a conference call last Tuesday point to her intention to "settle in for the longer term."

"I wouldn't have taken the job if I didn't believe there's a huge opportunity here. I just see [Yahoo] as a company with enormous assets that, frankly, could use a little management.

CAROL BARTZ,
CEO, YAHOO INC.

"She has talked like someone who is pretty passionate about the opportunity" to pull Yahoo out of its slump, Sterling said.

Olds described Bartz as "the definition of 'adult management.' [She] has shown herself to be able to grow companies through both good and bad times." He also suggested that Bartz's lack of experience in Internet businesses "will be a benefit to the company. She will bring a forceful pragmatism that I believe is missing. I see her as a force that can change the culture at Yahoo."

Bartz was president and CEO of Autodesk for 14 years before stepping down in 2006 and taking the post of executive chairman of the board. Previously, she was an executive at Sun Microsystems, Digital and 3M. ■

Elizabeth Montalbano *and* **Juan Carlos Perez** *of the IDG News Service contributed to this story.*


THE ROAD TO
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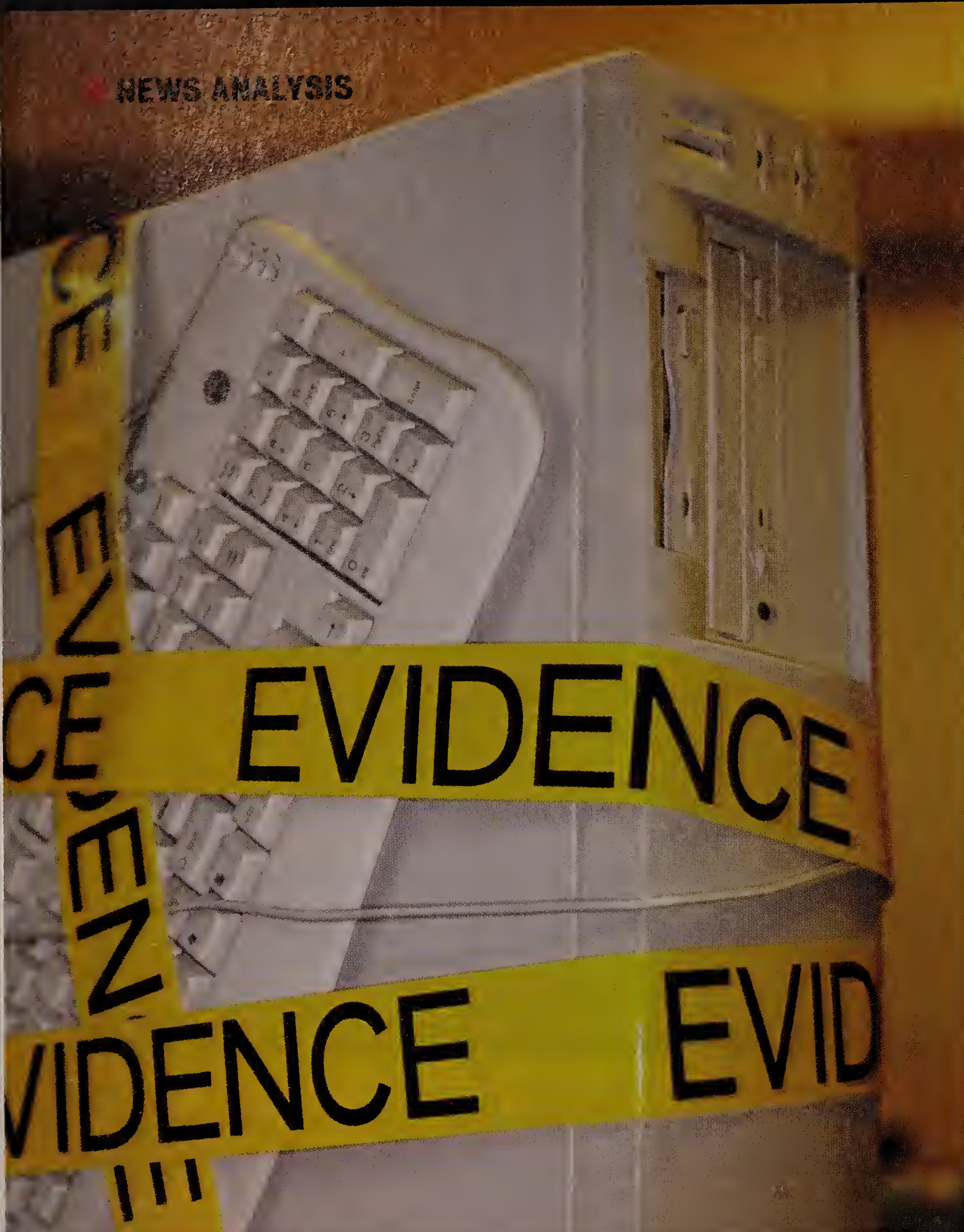

GETTY IMAGES

Wall Street Crisis Forcing Closer Look At E-records

Banks must implement strong data-retention systems as oversight increases. **By Lucas Mearian**

THE FINANCIAL crisis on Wall Street has prompted numerous investigations into the lending practices of financial services firms, and they all have a similar focus: Who knew what, and when did they know it?

With a robust electronic records retention system in place, companies could quickly answer such questions. However, industry observers note, few of the records-retention regulations enacted over the past decade have been strongly enforced, and most companies have done little to comply with them.

Analysts warn that the fallout from the Wall Street meltdown will quickly lead to stricter enforcement of existing laws — including the Sarbanes-Oxley Act, the Electronic Signatures in Global and National Commerce Act, the U.S. Securities and Exchange Commission's Rule 17A-4, and the Gramm-Leach-Bliley Act — and perhaps some new ones targeting the financial services industry.

At the same time, the health care industry faces more scrutiny as it hastens to move to a national e-health system.

Today, only 10% to 15% of U.S. corporations have electronic records retention systems in place, according to Gartner Inc. "In terms of a *good* electronic records systems, I would say it's closer to zero," said Debra Logan, an analyst at the consulting firm.

"There will be an increase in regulations," predicted Hugo Torres, IT director at Coral Gables, Fla.-based Great Florida Bank. "We've gotten wind of it. We'll be more heavily regulated than before."

Until two years ago, Torres said, it was common for four bank examiners to audit Great Florida Bank annually. Last year, as the crisis grew, 12 examiners inspected its records. Torres said he's bracing for even more auditors in 2009, as state and federal agencies scour every commercial and consumer loan to make sure that the banks performed adequate due diligence to determine the borrowers' ability to pay.

Logan said that stronger

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retention systems will also help companies to better defend themselves against legal action by disgruntled customers or employees.

"The amount of litigation that's going to be generated out of this Wall Street meltdown is going to be unbelievable. The regulators will be asking the banks what happened," Logan said. Lawsuits stemming from problems at government-backed mortgage finance companies Freddie Mac and Fannie Mae "will result in systemic change," she added.

Bill Savarino, a partner at Washington-based law firm Cohen, Mohr LLP and an expert in e-mail retention and other regulatory issues, said he expects that Congress will overreact to the Wall Street crisis and enact new legislation.

Bank Installs $500,000 Archiving System

AFTER COMPLETING an initial public offering two years ago, Great Florida Bank installed a complete electronic-documents archive and e-discovery system to deal with the additional regulatory oversight facing publicly held financial institutions.

The e-discovery system, from Santa Clara, Calif.-based Mimosa Systems Inc. – along with two Hitachi storage-area networks, Exchange and a SQL server cluster upgrade – cost $500,000, and it was worth every penny, said IT Director Hugo Torres.

Now all of the bank's e-mail and electronic documents are automatically indexed and stored on the two SANs, which replicate the data for disaster recovery.

Torres said the system is very helpful in the auditing process and will likely help the bank deal with any lawsuits filed against it by ex-employees or customers.

Great Florida Bank, which employs 275 people and has 26 branch offices in three counties, maintains 32 servers in its data center.

– LUCAS MEARIAN

"I don't know if it's necessary," he said. "If they enforce the stuff they've got, we should be fine."

Savarino, who has been advising IT managers on data retention issues for the past seven years, said companies that are implementing retention systems today often do little more than keep data for 30, 60 or 90 days and then hit the delete button. In such cases, legacy documents are unavailable and it isn't possible to show trends over time, he noted.

"I do not subscribe to the 30-, 60-, 90-day policy. I think they are woefully inadequate, and I don't think they comply with most rules and regulations," Savarino said. "When regulators audit regularly and investigate regularly, that's when they're going to start discerning who's keeping e-mail and who's not. They just haven't been doing that on a regular basis."

Savarino said IT managers and corporate legal departments should take the following three steps to prepare for the coming oversight onslaught:

■ Learn what the data retention laws require specific industries to do.

■ Install packaged archival and retrieval tools,

because it's too difficult to handle those tasks manually.

■ Utilize outside legal counsel.

"I know that sounds self-serving," Savarino acknowledged, "but outside lawyers can help companies figure out what the laws are and establish retention schedules and determine how to set up electronic archive 'buckets' to hold on to e-mail and documents."

Lawyers can also help set policies, procedures and parameters to deal with litigation holds, which require firms on notice of a potential lawsuit or government investigation to retain all potentially relevant electronic documents. Two years ago, Congress approved the Federal Rules of Civil Procedure, which set a baseline for which electronic documents must be retained and retrievable by corporate litigants in a court case.

Nonetheless, most companies "are standing there like deer in the headlights," Logan said.

"We have to have a more disciplined process for working with electronic records regulations," she said. "We need to have people in charge of managing information for the entire company. Today, everyone's expected to manage their own data."

As e-discovery pressures grow, companies and regulators must work together to determine which business documents are truly critical, Logan added. "People have to start throwing stuff away. It's not all precious," she said. "There needs to be some change to separate the wheat from the chaff." ■

Health Care Firm Turns to E-discovery After Lawsuit

WYOMING VALLEY Health Care System Inc. turned to CommVault Systems Inc.'s Simpana e-discovery software last March after a lawsuit was filed against one of its hospitals.

Howard Dowell, a network analyst at the Wilkes-Barre, Pa.-based health care provider, said the software automatically indexed four years' worth of e-mail over a weekend and provides a Google-like search engine for retrieving documents.

"Our system is giving us results in seconds," Dowell said, noting that it can be used to search by keyword, phrase, date or sender.

"Basically, I get it back like a Google search page with all the hits," he added. "I can save it as a .pft or .zip file and examine it later."

Wyoming Valley Health Care's data center runs 200 servers, 90% of which are Wintel boxes, and it has 1,200 e-mail users. Electronic documents are indexed on two servers and then stored on an EMC Clariion SAN.

Many health care firms are turning to such systems as the federal government increases emphasis on setting up electronic health records systems and enforcing the Health Insurance Portability and Accountability Act.

In addition, an increase in the number of lawsuits against health care providers has forced them to implement measures to better protect patient data and store it for set periods of time.

– LUCAS MEARIAN


SARA FORREST

■ THE GRILL

Mary Lou Jepsen

Pixel Qi's **CEO** talks about **One Laptop Per Child,** the future of **display technology** and **a target market of 7 billion.**

Dossier

Name: Mary Lou Jepsen

Title: CEO

Organization: Pixel Qi

Location: Taipei and San Bruno, Calif.

Favorite technology: All things optical.

Philosophy in a nutshell: "When people tell you something is impossible, what they are really saying is that it's an interesting project."

Most interesting place she has ever visited: "As a freshman in college, the holography lab. It absorbed the next decade of my life."

Favorite vice: The free sake at the ANA Lounge in Narita Airport.

Favorite nonwork pastimes: "What's that? Outside work? It will be a while . . . but seeing friends, kayaking, bike riding, seeing and making art, and going to concerts."

Mary Lou Jepsen is the former chief technology officer of the One Laptop Per Child (OLPC) organization. Her discoveries in display technology have helped create the XO, a laptop known for its low price and eco-friendliness. She is now focusing on advancing display technology with her company, Pixel Qi, which she founded in early 2008.

You gained worldwide recognition for your work with OLPC. How are you taking these technologies further with Pixel Qi? There is something about starting fresh. We started with a blank slate at Pixel Qi, and we have some very cool new screen designs that we anticipate will be on store shelves [this] year in both laptops and e-book readers. The OLPC screen was great but never had great color; its color was washed out — by design. We started over and came up with a new design — a new kind of LCD screen that has great color, but also a stunning e-paper mode, which is also a dramatic improvement over the OLPC e-paper state. In addition, we

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"The fact that we have a plateau today really suggests that it's time for something radical and new.

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have driven the power consumption down. We are working on intertwining the display with the CPU and motherboard to dramatically further lower the cost and vastly prolong the battery life of the laptop between charges.

Longer term, we are developing products for 2010-2011 where we can completely remove the backlight from the LCD in laptops. These displays will be bright and colorful in room light and bright sunlight. They will be easy to read and offer ultralow power consumption — less than 1% of current LCD power consumption.

What do you think displays will look like in five years? Ten years? I think that the future of portable computing is all about the screen.

Look at an iPhone; all you see is the screen. With cloud computing and thin-client technologies, we don't need a motherboard or a CPU anymore — just a transceiver and a screen. In a very real way, I think that we will see, more and more, new forms of portables emerging that are dictated by the screen alone.

Historic estimates of the future of display technology have been exceedingly poor. We were all supposed to have holographic video by 1985. Now we hear that it's OLEDs or electrophoretics [a type of low-power, passive display] coming next.

I disagree. Here's why: The manufacturing development of these new technologies and materials takes many years and billions of dollars. OLEDs and electrophoretics were promised in high-volume mass production a decade ago and still attain annual volumes of less than 1 million units a year, with quality and reliability that fall well short of what mature markets demand.

I think that we just need to look to the history of silicon technologies to see the future of display. About two decades ago, there were many different electronic technologies. [Then] CMOS became good enough, and everyone moved to it, except for niche applications. A similar shift has occurred in displays. Today it's nearly all LCD.

Behind the scenes, the manufacturing infrastructure of TFT [thin-film transistor] LCD today dwarfs that of foundry silicon, shipping about $100 billion [worth] per year. I believe that we need to leverage this infrastructure in new ways to make new displays, but without changing the manufacturing processes or materials in drastic ways. Rather than inventing new processes to compete with this immense and mature infrastructure, we follow and partner with the manufacturers' development road map and create truly innovative displays that can ship in high volume and at low cost quickly.

This is what I was able to do at One Laptop Per Child, and this is the trail we continue to blaze at Pixel Qi.

Will we ever join Spock in the holodeck? The holodeck is possible, but not yet totally possible. It will take a while to debug it — many years, I suspect. But lots of efforts have been made. The question is, do we actually want to pay for it, use it and suffer through the debugging period?

What accomplishments are you most proud of? I'm most proud of the impact that One Laptop Per Child has had on literally millions of children with little or no opportunity otherwise. There's a kid named Badmus in northern Nigeria that sent a note to me at OLPC in which he said, "I love my laptop more than my life." He has a tough life, and there are many millions of kids just like Badmus. We need to reach them all.

I'm trying to continue the efforts we started at One Laptop Per Child at Pixel Qi by making screens for the broader market rather than for just one laptop model as I did at OLPC. Why? This allows much bigger reach. Paradoxically, spinning out of OLPC was the best way I could think to continue to help OLPC, because by making more of something, you can make it less expensive. Less expensive laptops would allow more children access to them.

Pixel Qi, of course, is a for-profit corporation. But let's remember the immense scale of the opportunity when you realize that all nearly 7 billion people on Earth can be your target market.

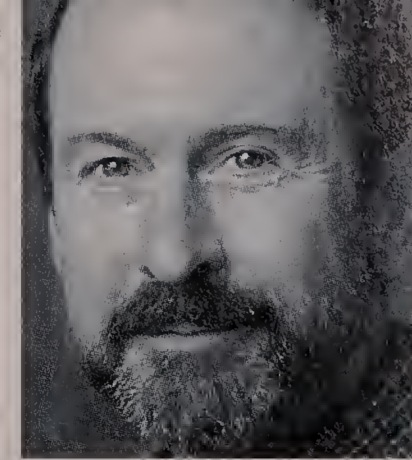
Do you have any advice for young inventors in the computer industry? It's too easy to accept that because the definition of computing today seems pretty stable and standard, that therefore we now have what we are going to have. The fact that we have a plateau today really suggests that it's time for something radical and new.

Actually, the "bottom of the pyramid" is a good place to start looking for an entirely new way to define computers. What is the computer platform that could serve all adults on Earth rather than the 1 billion or so that now have access?

— Interview by **Sara Forrest,** *a freelance photographer and writer in New York (saraforrestphoto@gmail.com)*

■ OPINION

Gary Anthes



Out With the Old, In With the New

LATE LAST YEAR, just when it seemed that every slimy rock on Wall Street had already been turned over, came news of the Mother of All Ponzi Schemes — the apparent disappearance of $50 billion at the hands of Bernard Madoff.

The mind boggles at such sums. And yet, that's small potatoes compared to the pyramid scheme that was built around mortgage-based financial derivatives. I used to wonder at the megacompensation of those "managers" on Wall Street. How could so many make so much, I wondered, doing things that seemed to contribute so little to society?

I chalked it up to my ignorance, to my having gone to business school long before things like credit-default swaps existed. If someone got a $10 million bonus for doing something, that something must be pretty important and useful, I figured.

A mortgage is a thing of value — to the home buyer, to the lending institution and to society. But mortgages were packaged and sold, and then repackaged and resold again and again until they were buried in deals so complex that neither their buyers nor their sellers completely understood them.

But so what? Risk and "leverage" (debt) were in fashion, and every party at each step made big bucks. Never mind that no real value was created at most of those steps.

So, what does this have to do with IT? Last year, researchers at the Wellcome Trust Centre for Neuroimaging at University College London pinpointed a part of the brain, called the ventral striatum, that is the locus of people's craving for the new and unfamiliar. It predisposes people to take risks even when there is little logical basis for doing so. I think it was at work on Wall Street, and I think IT managers are often driven by it as well.

■ What do you have in common with Bernard Madoff and the Wall Street managers who bought those mortgage-backed securities?

The history of IT since the 1970s can be summed up as one giant quest to find a better place to put stuff — hardware, software and data. First it was on mainframes, then on clients and servers, then in N-tier arrangements; then it was outsourced or offshored, then "virtualized," then put on external Web servers, then moved into the cloud. There were even a few flashbacks: Mainframes were said to be back in style; thin clients were in, then out, then back again. Every year or so, it seems, someone comes up with a "better" idea of how to slice and dice computing's resources.

Here's how it works: An IT manager has a certain computing infrastructure in place for his company. It works OK, maybe better than the last thing he had, but of course it does have some problems. Onto the stage stride the vendors, the analyst blowhards, a few peers and maybe a few users, all saying they have a better idea. Indeed, the IT manager needs a better idea in order to deflect criticism for that downtime last week and to justify a budget increase. Plus, his ventral striatum says new things and risk-taking are good.

Our hapless IT manager finds that changing to the new idea is much more expensive and painful than anyone expected and that not all the promised benefits are realized. But at least he has a new "platform" on which to catch his breath until the next big thing comes along.

Am I suggesting that we IT people — who live on the leading edge almost by definition — should run away from the next big thing? Should we emulate our financial brethren, so recently drunk on risk and leverage, who are now afraid to get out of bed? No, I'm just suggesting that new computing paradigms always have a certain faddish quality, and they entail risks you don't always have to take. Caution is back in style.

So this would be a good year to make what you have work a little bit better — a good year to invest in training, procedures, documentation and other boring things. Then, by 2010, you'll be ready for the next silver bullet. ■

Gary Anthes *is a* Computerworld *national correspondent. You can contact him at gary_anthes@computerworld.com.*

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PERKS UPGRADE
INCREASE
TOUGH TALK
ECONOMY
FREE FIRST YEAR

TOUGH TALK FOR HARD TIMES

Nine ways to get more out of software vendors in 2009.

BY THOMAS HOFFMAN

A FEW YEARS AGO, while sleuthing out underused, undermaintained or misaligned software assets at Sony Pictures Home Entertainment, David Cortese found that he was paying for 266 ERP licenses at a cost of $7,000 per seat when in fact he was using just 177.

By reworking those agreements and some others, he cut several million dollars in IT overhead. "Everything is negotiable," says Cortese, the company's vice president of IT.

As the economy slides, that's becoming the mantra for more and more IT leaders, says Joe Auer, president of International Computer Negotiations Inc., a Winter Park, Fla.-based consultancy. "When [economic] times are great, it's tough to get people to do better deals," says Auer, who has 34 years of technology contract negotiation experience. "But when times are tough, they want to."

Do they ever. Forrester Research Inc. analyst Ray Wang says that over the past few months, more than 200 clients have contacted him and other Forrester analysts looking for help in renegotiating existing licensing and maintenance pacts. "They're looking for Plan B's" to cut costs, says Wang.

Now is the time to design your own Plan B. Here are nine ideas to help you negotiate harder with vendors, cut waste, sharpen licenses and get more out of your IT assets this year:

1 DO YOUR HOMEWORK.

To be adequately armed for effective contract negotiations or renegotiations, it's imperative that you know your existing contracts inside and out, says Roy Schleiden, senior manager of IT procurement at YRC Worldwide Inc., a transportation services company in Overland Park, Kan. "It's amazing to me how many people don't read their contracts and don't know what's in them," he says.

2 GIVE BACK SHELFWARE, AND DON'T BUY MORE.

Wang says that many clients overestimate the number of user seats needed for a particular software system and end up licensing a lot of shelfware. "There's a lot of room to cut licenses," he says.

But many licenses are designed to make that difficult to do. If a customer wants to reduce the number of seats, some vendors, including SAP AG and Oracle Corp., typically respond by raising the price per seat, says Wang. The net result: You pay the same and get less.

Although both SAP and Oracle tend to be fairly rigid about lowering the number of user seats in software agreements, there are techniques you can use to get around this problem with other vendors. For instance, since July, Schleiden and his team have worked with approximately 300 of YRC's software vendors to see if it would be possible to "park" unused seat licenses until the economy improves. Parked seats are set aside and licensed at a price that's significantly lower than the per-user price in the contract. Once the economy improves, the parties unpark the seats and revert to the original cost structure. So far, YRC has been successful with about 80% of the vendors it has contacted, including providers of application software, technical tools and database systems, says Schleiden.

3 USE YOUR LEVERAGE.

But renegotiation after the fact is never easy. Given the difficulty of adjusting a license in midstream, the best cost-saving opportunities are at the front end of a contract, when the vendor knows that you can still walk. For example, vendor pricing models are often poorly documented,

RICHARD BORGE

says Wang, so before you sign, make sure you completely understand the terms of pricing and use them to your advantage. "It's more cost-effective to flex up," he says.

That means, for example, that a customer with 1,000 users should negotiate hard for the first 500 seats at the onset of contract negotiations and then add sets of 100 more licenses as needed, Wang says.

4 ASK, AND YOU SHALL RECEIVE.

In light of the economic crunch, some vendors are coming up with creative financing to entice would-be customers to sign deals, says Schleiden. If they don't, you should. "We have a list of side perks we typically ask the vendor for," says Schleiden. These include cost caps on future maintenance and licensing increases, and free first-year maintenance. "We've never been successful in getting them all, but we typically get several," he says

Never hesitate to ask vendors for concessions, says Gartner Inc. analyst Jane Disbrow. During the course of contract negotiations, software vendors will typically go through a discounting process "that leads the customer to believe that [the salespeople] won't be able to feed their own children tomorrow because they gave them such a great deal," she says.

But don't worry about the vendors. They "always tend to hold back money," Disbrow says. Your goal should be to not leave any of that money on the table.

5 ELIMINATE PHANTOM SYSTEMS.

During the cost-cutting drive at Sony Pictures Home Entertainment, Cortese met with various business unit leaders to determine what software contracts were in place and how effectively software was being used. "I was pretty blown away by what I discovered," he says.

For instance, during Cortese's evaluation, the company received a $125,000 maintenance bill from a provider of workflow management software. With a little digging, he found that the system was no longer in use. "If we hadn't asked about it, the maintenance bill just would have gone through," he says.

6 PUT MAINTENANCE UNDER A MICROSCOPE.

Vendors hate to discount maintenance, largely because it's so profitable. For instance, 85% of the revenue Oracle derived from software maintenance in fiscal 2008 was pure profit and represented 76% of the company's total profit, according to the company's 2008 10-K report.

If a customer signs an enterprise software deal worth tens of millions of dollars, it might have the leverage to demand discounted maintenance rates, says Wang, but generally, it's an area that vendors don't want to haggle over. "Maintenance is the last thing [vendors] want to discount," he says.

But there are always exceptions. For example, under most vendor-generated software contracts, customers begin paying for maintenance before the ink has dried on the contract — even if it takes a year or more to implement the system. But some IT leaders push hard not to pay maintenance for any software until the system has gone live. Cortese says he's had mixed results in attempting to defer maintenance, but he was successful recently on a seven-figure CRM license.

YRC Worldwide's Schleiden tries to

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DRIVE A HARD BARGAIN

INTERNATIONAL COMPUTER NEGOTIATIONS INC. provides a comprehensive software licensing agreement checklist that you can access online at *www.dobetterdeals.com/swchecklist*. Among those tips is that any software licensing agreement should identify the applicable parts of any collateral material that helped you choose the vendor or in which the vendor "promises" to meet your needs. Examples include marketing materials, portions of your request for proposals, the vendor's proposal and correspondence.

ICN also suggests that a software license agreement should include the following provisions:

- It should state that no payment is required until you receive the goods or services.
- It should allow a sufficiently broad scope of use for the software. A limited scope of use is the leading cause of higher license fees.
- The agreement should allow certain parties other than the original licensee to use the software. Such parties include subsidiaries, the parent company or parties involved in a merger or acquisition.
- The license grant should be broad enough to cover usage rights even if you don't opt for maintenance.
- You should receive the right to use the source code, modify it and create derivative works from it.
- If you are acquiring an application that isn't an off-the-shelf product, you should have the right to test and accept the software before any payment obligation is triggered.
- Under the term and termination provision, your term of use should include the acceptance-testing phase, and your right to terminate before the expiration date should begin prior to final acceptance.
- The contract should state what recourse is available to you if the vendor guarantees something but doesn't deliver.
- The vendor should guarantee that it will fulfill its tax responsibilities.
- The vendor's liability limits should be consistent with the magnitude of the deal. Normal vendor liability-limitation provisions severely restrict the amount of protection you receive from the vendor.
- You should be able to terminate the agreement for any material breach by the vendor if it doesn't address the problem in an agreed-upon period of time.

– THOMAS HOFFMAN

Continued from page 24
get the first year of maintenance free of charge. Though he, too, is not always successful, he says that "lately, the percentage [of vendors that concede] is higher than it's been in the past."

Schleiden's IT procurement group also tracks the number of software maintenance calls it puts out to each of its suppliers annually to make sure YRC is getting its money's worth. Last year, Schleiden renegotiated maintenance fees with some vendors and shifted to use-based maintenance agreements with others. With one ERP vendor, he recently negotiated a three-year maintenance agreement at a 2% annual increase cap per year.

Schleiden says it's easier to renegotiate maintenance agreements for middleware software than it is for mainframe systems because there's more competition in the middleware market.

Other users take a hard line across the board on any maintenance fee increases. "We make it clear to all of our suppliers that while software [is] important to our company, the focus of our company is selling things like helicopters and golf carts," says Sherri Zapinski, director of Textron Inc.'s indirect strategic sourcing center of excellence. "So if an engine supplier doesn't get to raise its prices, it's not fair if someone like a software supplier that's used for overhead gets to raise its prices."

Still, Zapinski says she "might make an exception" if a vendor has been reliable and consistently responsive in delivering patches, upgrades and other fixes over time.

7 BYOC.

Auer strongly recommends that clients bring their own contracts whenever possible and that they let the vendor know they will be doing so in the request-for-proposals stage of the deal.

"Here's a legitimate problem for vendors: If you pull out your own contract at the end of a deal, there's rarely a way for vendors to agree to it quickly," says Auer. That's because the lawyers representing vendors are familiar with their clients' formulaic contracts but would require additional time to go line by line through a customer's contract. In fact, says Wang, if you do insist on using your own "paper," expect to add three to six months to the negotiation process, even if you state your intention upfront.

In Disbrow's experience, customers outside the public sector almost always have to use form contracts offered by SAP and Oracle. But some customers say they're comfortable using vendor-generated contracts; they merely insist on amending them.

"We've never signed any kind of an agreement without making changes," says Tyrone Magby, IT sourcing manager at Fiserv Inc. in Brookfield, Wis. Key examples include the addition of indemnification clauses and guarantees that the maintenance terms are tied to the net price and not the list price of the system, he says.

8 DON'T BE RUSHED.

Don't allow a vendor to hurry you or corner you into making a deal to meet its timetable. "We don't like to be forced into [meeting] a date," says Magby. "We don't play that game."

"If a vendor gives you less than a month to do a deal, you'll almost certainly lose financial benefits to your company," says Schleiden. That's because 30 days or less isn't enough time for customer companies to work their own provisions, like audit requirements, into a contract or to negotiate and "make the vendor sweat the competition," says Schleiden.

9 RUN THE CLOCK.

The best time to negotiate a software deal is toward the end of a vendor's financial quarter or fiscal year, when its salespeople are trying to hit their numbers. Disbrow says contracts landed during these periods can include overall discounts of 5% to 10%. To gain maximum leverage, Auer recommends starting the process 60 to 90 days before the end of a fiscal year, or 30 days before the end of a financial quarter.

"Vendors are real serious about salespeople making their quotas," says Auer. "They can make magic things happen during those times." ■

Hoffman *is a former* Computerworld *national correspondent. Contact him at tom.hoffman24@gmail.com.*

SWEET TALK

AS PART OF HIS EFFORTS to cut software costs, David Cortese has occasionally agreed to serve as a spokesman for products his company uses.

For instance, Cortese, the vice president of IT at Sony Pictures Home Entertainment, agreed to speak at a business intelligence vendor's annual user conference and a few educational events. He also agreed to be interviewed for an article about its products.

In exchange, Cortese received training credits for his IT staff and passes to the vendor's annual customer conference, a value he estimated in the tens of thousands of dollars.

Cortese says he's been very selective in speaking about vendor products. "I've done this with two vendors in eight years. It's only for the best of the best; you have to be very discriminating about it," he says.

Be aware that speaking for a vendor doesn't guarantee better service, says Forrester Research analyst Ray Wang. He knows some users who have spoken in support of ERP vendors but still faced lengthy implementation delays. "The lesson learned is that you'd better get some delivery dates agreed to upfront," says Wang.

About a year ago, Textron was asked to discuss a software product that a vendor was modifying. In exchange, it was offered new back-end functionality free of charge, says Sherri Zapinski, director of Textron's indirect strategic sourcing center of excellence.

Textron declined the offer. "We weren't sure if we were going to like that new functionality," says Zapinski. She says her company has agreed on occasion to speak about vendor products at conferences but without any financial strings attached.

YRC Worldwide officials have spoken about products on behalf of vendors – but "infrequently and very cautiously," says Roy Schleiden, senior manager of IT procurement and vendor management. YRC Worldwide insists on several conditions, but most important is that it retain complete control over what it says about the products.

– THOMAS HOFFMAN

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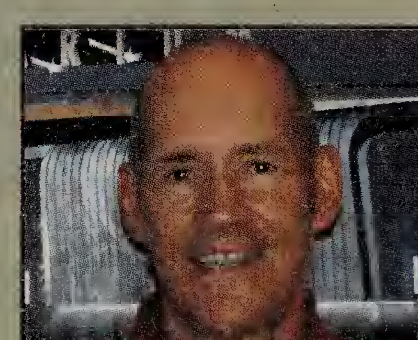

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TURNING UP THE HEAT TO SAVE ENERGY

Scottrade found that its overcooled data center was a resource drain.

BY ROBERT L. MITCHELL

THE temperature's rising in online brokerage Scottrade Inc.'s data center — and that's a good thing. The move has allowed the St. Louis-based company to reap enormous energy savings while increasing reliability.

Six months ago, CIO Ian Patterson hired the engineering firm Glumac to construct a computational fluid dymanics (CFD) model of Scottrade's data center. The model provided a complete picture of thermal airflows.

Samuel Graves, chief data center mechanical engineer at Glumac, oversaw the effort. "Much can be learned from a thermal CFD model, and going forward, the model becomes an excellent tool to help determine the effectiveness of potential solutions," he says.

As is the case in many large data centers, Scottrade was overcooling the room. The solution: Fix the airflow problems and hot zones in its hot aisle/cold aisle configuration and turn up the computer room air conditioning (CRAC) unit's thermostat. That sounds scary, but Patterson says implementing the recommendations cut power consumption by 8% and improved equipment reliability — all without affecting the performance of the data center.

Power and cooling infrastructures are a large piece of the data center's overall operating cost. The hard dollar savings from some fairly straightforward

FOUR WAYS TO SAVE ENERGY

A few small changes can save data centers big bucks on energy consumption, cutting bills by 25% or more, says Samuel Graves, chief data center mechanical engineer at consulting engineering firm Glumac. HERE ARE FOUR TIPS.

1 SEAL HOLES IN RAISED FLOORS. It's common to see very large holes cut under the power distribution units and racks to bring power and cabling to the racks, says Graves. That affects air pressure in a raised floor, creating huge inefficiencies. "I did an evaluation of a large data center a couple of years ago," says Graves. "When those holes were sealed, the client was able to shut down eight CRAC units, as they were no longer needed for cooling."

2 ADD BLANKING PANELS. It sounds simple, but many data centers haven't taken this boring but critical step. Unless all vacant slots in a rack are sealed in this way, air from the hot and cold aisles will mix inside the rack instead of moving through the rack from the cold aisle to the hot aisle as it should.

3 THINK BEFORE YOU TILE. "Almost always, the perforated tiles in the cold aisle are set up with an architectural appeal in mind and not the actual server load," says Graves. It may look nice to have those perforated tiles neatly spaced and aligned, but it creates imbalances between the air provisioned and the actual heat load in the racks. Improper placement of perforated tiles is a major culprit behind cooling problems in data centers.

4 DO AN ASSESSMENT. It's hard to know exactly where to place those perforated tiles if you don't know what your cooling requirements are in each row and for every rack. Consider hiring an engineering firm to create a basic CFD model of your data center. These models can be used to identify problem areas and design the proper fix.

According to Graves, the cost of modeling a large data center like Scottrade's typically comes in at about $1.50 per square foot. Tuning and optimizing the model adds 50 cents per square foot. "This is a generalization on cost, and obviously, the larger the data center, the lower the per-square-foot cost," says Graves.

– ROBERT L. MITCHELL

changes were "significant," Patterson says.

Scottrade didn't just reap those savings by retrofitting an old, poorly designed facility. Quite the contrary, Patterson achieved the efficiency gains in a state-of-the-art, 34,000-square-foot data center that Scottrade had rolled out in 2007. The cost benefits weren't just limited to power and cooling bills: Scottrade also reduced the load on backup power systems and reduced the number of backup batteries needed.

The savings that Scottrade achieved are actually on the low side, says Graves. "Scottrade was already doing a lot of things right," he adds, noting that Glumac has seen some data centers that achieve a 25% decrease in cooling costs when tuned properly.

The CFD model identified three key areas for improving efficiency. First, it found that a "thermocline," or plane of warmer air, was floating in the upper half of the data center space. That hot layer started at a height of about five and a half to six feet and extended all the way to the 10-foot ceiling. Thus, the equipment in Scottrade's top racks was in the hot-air cloud.

The second issue was the configuration of the racks themselves. Not all racks were fully populated, but equipment was always concentrated at the top of the racks, where it was subject to those higher temperatures. In fact, says Patterson, the hottest-running servers tended to be mounted at the top, where cooling efficiency was lowest. To address that, Scottrade had lowered the CRAC system temperature settings, overchilling the rest of the room.

"Scottrade was running the overall data center temperatures colder than necessary to keep the temperatures at the top of the racks within acceptable ranges," Graves explains.

Finally, the balance between the heat load produced by the server racks and the quantity of air supplied to the cold aisle was out of whack. Engineers redistributed the perforated tiles on the aisle floor to match the output required. "A thermal balance was noticed immediately," says Graves.

ACHIEVING BALANCE

Air conditioning systems perform most efficiently when the temperature differentials are higher, so Glumac implemented changes that made the cold aisles colder and the hot aisles a few degrees warmer. "We

"There's an optimal temperature point where you want your chips running.

IAN PATTERSON, CIO, SCOTTRADE INC.

weren't optimizing the heat-to-cooling ratio that the AC units needed. You have to get that balance," Patterson says.

To address that thermal layer problem, Glumac engineers adjusted the CRAC system by raising the height of the air-return intakes by one and a half to two feet. That pushed the thermocline layer above the tops of the racks, providing a better thermal environment for equipment located there.

Once the airflow balance was achieved in the aisles, engineers turned their attention to what was inside the racks. "There's an optimal temperature point where you want your chips running," says Patterson. With that in mind, Scottrade reorganized the racks, moving power-hungry servers lower to balance the heat distribution within the racks.

It also helps that Scottrade's new data center is using energy-efficient servers. The 1U and 2U Dell PowerEdge blade server models it has chosen use low-voltage processors, variable-speed fans that accelerate and decelerate depending on processing power consumption, and high-efficiency power supplies. (Those units came with VMware virtualization software embedded on ROM, making setup easier.) "It draws less energy, and it keeps the internal temperatures in the boxes cooler," Patterson says.

SCOTTRADE: HOW THEY DID IT

After creating a computational fluid dynamics model of Scottrade's data center, Samuel Graves, chief data center mechanical engineer at Glumac, was able to identify the key problem areas. Then these three basic, inexpensive changes helped Scottrade cut power consumption by 8%, increase cooling efficiency and improve equipment reliability in its data center.

1 TUNE TO THE MODEL. Glumac tuned Scottrade's existing server environment to the CFD model. "I ensured that the right amount of cold air was supplied in each cold aisle and more specifically in front of each rack – not too much, not too little," Graves says. "The raised-floor perforated tiles were redistributed in [each aisle of] the data center to match the CFD model output. In some cases, where higher-density servers were prevalent, grates were added in place of the standard perforated tiles."

This airflow balancing stopped much of the over-the-rack recirculation in the data center space and provided just the right amount of cooling where it was needed.

2 ELEVATE THE HOT ZONE. Scottrade's air conditioning system did not use an in-ceiling plenum for hot-air return. Instead, returns were located about five and a half or six feet from the floor – where a thermocline (a layer of hot air) was identified. Glumac added two-foot extensions onto the air conditioning units. These extensions effectively moved the thermocline in the room up by one and a half to two feet – above the tops of most of the racks – allowing equipment in the tops of the racks to operate in a better thermal environment.

3 BLANK-OUT THE RACKS. Glumac added blank-out panels in all vacant slots in server racks. These panels are a physical barrier between the hot and cold aisles, ensuring that air moves from the cold aisle to the hot aisle and allowing each to perform efficiently.

"Large temperature differentials between hot and cold aisles are critical to increase cooling efficiency," Graves says. "Thermal mixing of [hot and cold air within] the server rack is a major reason why many data centers cannot achieve that."

– ROBERT L. MITCHELL

"Large temperature differentials between hot and cold aisles are critical to increase cooling efficiency.

SAMUEL GRAVES, CHIEF DATA CENTER MECHANICAL ENGINEER, GLUMAC

NEWER AND HOTTER

But there's another advantage to newer servers that data center managers may miss: They are able to run fine at higher operating temperatures than the previous generation of equipment was able to. That means that server racks can run warmer.

"Data center operators who take advantage of these higher-temperature capabilities can gain significant energy efficiencies in their cooling infrastructures," says Graves.

Those changes "improved our power consumption, our air conditioning costs, and reduced our total costs of running our business," says Patterson.

Scottrade needs low latency levels in order to fulfill its commitment to completing trades quickly. The firm relies on the highest possible server performance to support split-second transactions for its customers. Fortunately, the redesign required no compromises: Moving to a hotter data center didn't reduce performance or affect longevity of the computing equipment, Patterson says. Instead, the changes improved reliability by keeping equipment within optimal operating ranges. ■

ENTERPRISE Linux? NOT SO FAST.

Some still find the business case dubious. **By Robert L. Mitchell**

MIGRATING BUSINESS applications from high-end Unix-based systems such as Sparc/Solaris to commodity x86/Linux platforms has been a popular idea for the past few years, but not everyone thinks going full-on with Linux is the best solution — at least not yet.

Dan Blanchard, vice president of enterprise operations at Marriott International Inc., is serious about Linux. He says his company's transition from high-end Unix-based systems from Hewlett-Packard Co. and IBM is ongoing — and inevitable. "We're migrating, and we have a strategy to continue deployment of Linux," he says.

Tony Iams hears that refrain from IT executives frequently. "Companies have had a long-term goal of consolidating all of their Unix systems onto Linux," says Iams, an analyst at research firm Ideas International Ltd. The companies want to consolidate on industry-standard technology across the board, he says, and that means Linux running on x86 hardware.

But Norm Fjeldheim, CIO at Qualcomm Inc., decided to take a pass on a Solaris-to-Linux migration. The company does use Linux for some applications, but Fjeldheim's IT team concluded that migrating its industrial-grade Solaris systems to Linux was a dubious business proposition. "We're not moving from Sun to Linux. We haven't been able to make the economic case for it," he says.

While it appeared at first glance that Qualcomm would save money upfront on hardware and operating system costs by migrating, the price comparisons offered by vendors were based on retail prices. "We don't pay retail, [and] when we figured our discounts [with Sun Microsystems], the price advantages went away for Linux pretty fast," Fjeldheim says.

And that wasn't the only issue. His team wasn't satisfied with the quality of the administrative tools available for the Linux environment. At the time Qualcomm's IT staff did the assessment — some 18 months ago — the things that make an administrator's job easier "really didn't exist to the same degree in Linux as they did on Unix-based systems," Fjeldheim says. And that, he adds, would have translated into larger administrative costs.

As director of IT at Qualcomm, Matthew Clark was part of the team that reviewed the Linux option. The company's ratio of administrators to users is currently 500-to-1 (although he plans to lower that to about 450-to-1). "With Linux, it would have been 150- or 175-to-1. We would have had to hire three additional administrators for every administrator we have right now working on Unix," he says.

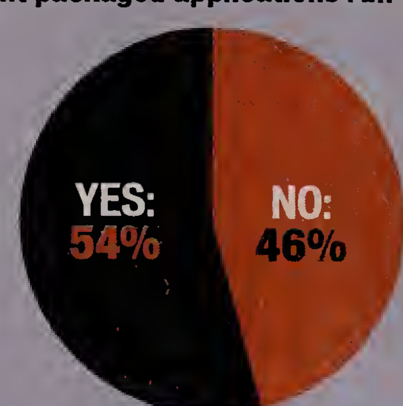
Iams isn't surprised to hear that assessment. "That's traditionally been one of Sun's strong points," he says. "They've optimized their systems for that metric."

Clark acknowledges that the administrative tools have improved since Qualcomm last reviewed its Linux options, but he still thinks Linux would be more costly. "If we started today with the new [tools] coming out, we might be in the neighborhood of two [admins] for every one," he says.

Although the numbers didn't add up for Linux as a Solaris replacement, Clark said he's impressed with Linux's overall capabilities and believes the operating system will continue to have a place at Qualcomm. "We like the

LINUX IS A CONTENDER

Would you consider changing the operating system your most important packaged applications run on?



BASE: 461 NORTH AMERICAN ENTERPRISE IT DECISION-MAKERS

Which operating system would you consider?

Linux	37%
Unix	30%
Windows Server	28%

BASE: 249 RESPONDENTS WHO SAID THEY WOULD CONSIDER CHANGING. (MULTIPLE RESPONSES ALLOWED)

SOURCE FOR BOTH: FORRESTER RESEARCH INC. SEPTEMBER 2006 SURVEY

GROWTH AND MARKET SHARE

YEAR-OVER-YEAR OPERATING SYSTEM GROWTH	2005	2006	2007
Linux	30.8%	14.7%	12.5%
Unix	-0.6%	-0.9%	1%

OPERATING SYSTEM MARKET SHARE	2005	2006	2007
Linux	11%	12%	13%
Unix	34%	33%	32%

SOURCE: IDC, 2008

performance, and we recognize that throwing a whole bunch of little boxes at things can work really well in certain applications," he says.

NOT FOR EVERYONE

Blanchard agrees that Linux doesn't work for every application. In some cases, he has seen Marriott's IT team look at a Linux migration and decide not to proceed.

Overall, the applications moving to Linux at Marriott tend to be high-end Unix systems, he says, and the Linux-based tools that are replacing them are sufficient for Marriott's needs. "We started talking about enterprise-class Linux systems 10 years ago," Blanchard says. "It took a while to get that up and running."

It also helps that Marriott's IT vendors are supporting the initiative. Rather than trying to persuade the hospitality company to stay on Unix systems and high-end server hardware, both IBM and HP have been helping to make those migrations go smoothly. "Our vendors are very comfortable with this transition," Blanchard says.

For now, however, Unix systems are still very much in the mix as Marriott plans migrations on a case-by-case basis. "We do not have a strategy to just close our eyes and go with one particular platform to the exclusion of all others," Blanchard says.

For its part, Qualcomm is getting more bang for its buck from its Solaris 10 systems by taking advantage of the operating system's virtualization technology, Solaris Containers. That feature was also responsible for stopping Bank of New York Mellon's Linux transition plans.

Dennis Smith, first vice president in the bank's advanced engineering group, says that when he started planning last January, he anticipated a wholesale "replatforming" of all of the Solaris systems at the bank onto Linux servers. That hasn't happened.

After transitioning a few systems, Smith decided to bring Sun back in to talk about potentially using its virtualization technology, and he began to experiment with Solaris Containers. "We're in the middle of that now," he says.

> **"We're migrating, and we have a strategy to continue deployment of Linux.**
>
> **DAN BLANCHARD,** VICE PRESIDENT OF ENTERPRISE OPERATIONS, MARRIOTT INTERNATIONAL INC.

> **"We're not moving from Sun to Linux. We haven't been able to make the economic case for it.**
>
> **NORM FJELDHEIM,** CIO, QUALCOMM INC.

Sun's Containers technology, which creates virtual machine instances that share a single copy of the operating system, can make for a compelling economy-of-scale argument, Iams says. It can scale much better than VMware, it's more mature than Parallels' Virtuozzo, and it's supported by Sun as part of the core operating system. With Containers, he says, "you have a much smaller footprint per instance, so you get a much higher level of consolidation. While you might [have] a few dozen [VMs per physical server] with VMware, with Containers it's hundreds — or even thousands — per server."

Smith saw enough of a benefit from Containers to change his plans, but he's still keeping Linux in the picture. "We won't be as aggressive in replatforming to Linux as we initially thought," he says.

But, he adds, "we feel that both platforms will have a place in our infrastructure." ■

Eyeing Risks While Cutting Spending

How do you **cut 15% of your budget** while keeping the company secure? You **assess the risks** and keep your fingers crossed.

WE'RE STILL dealing with fallout from the weakening economy. Besides the massive layoff I wrote about last time, each department has been told to decrease spending by 15%.

My job as a security officer is to ensure the confidentiality, integrity and availability of our systems and intellectual property, and my budget was fairly limited already. So there wasn't much I could do to further cut expenses without putting the company at serious risk. Nonetheless, I did a risk assessment and came up with the following cutbacks.

First up is intrusion detection. Our 12 sensors are positioned to monitor the DMZs at corporate and remote offices as well as major data centers and some interoffice communications. We're using several offshore analysts to monitor those sensors; they attend to the alerts and, when necessary, escalate things to our analysts here in the U.S. for evaluation and action. But we're definitely monitoring more attack signatures than we need to. Our analysts spend a good part of their days chasing false positives.

When we had more resources, that didn't seem like a big deal, but now it's looking like an area of potential savings. I'm going to tune the rules so that we can decrease the offshore head count.

The next cuts are in the form of SecurID tokens. Until now, our company has issued the hard (key fob) tokens. There are currently more than 5,000 tokens deployed worldwide. These tokens have batteries that last only a few years, and then new tokens are needed.

With software tokens, we can eliminate the need for those hardware replacements and the cost of shipping fobs to our users around the world. They are easier to deploy, and there aren't any batteries.

> ■ **I'm never happy about having to make cuts in the security budget, of course, but I'm sure that this economic downturn will be short-lived.**

The drawback is the threat of keystroke-capture programs. Since the physical tokens are separate from the computers, they're not susceptible to keystroke capture being used to obtain a user's PIN.

It's a risk we're going to have to take, and we may be able to get users to enter their PINs by pointing their mice to on-screen number pads, which would mitigate the keystroke-capture threat. An added benefit is that the software tokens can be used on mobile devices.

LONG-DISTANCE AUDIT

Other savings will come from altering my audit schedule from twice to once a year. This saves on travel expenses and the cost of an independent contractor. I'm also looking into having an engineer in India conduct the audits. That could be doable because my audit methodology is fairly streamlined and routine.

Finally, I'm going to stop paying maintenance on some of our commercial scanning tools. I'll keep IBM's ISS Scanner for servers and Hewlett-Packard's WebInspect for applications, but we can use open-source tools to fill in the gaps. Nessus has always served me well, and the open-source version can stand up nicely to the commercial equivalents. And there are plenty of Web-based application-scanning tools, such as Nikto or Google's Ratproxy. They may lack the bells and whistles of commercial equivalents, but they do the job.

I doubt I'll be able to get to that 15% figure without pulling out firewalls and VPN concentrators. But doing things like that is riskier than the other things I outlined above.

I'm never happy about having to make cuts in the security budget, of course, but I'm sure that this economic downturn will be short-lived and that I will eventually be able to ramp up our security program again, returning it to a more meaningful level. ■

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Trouble Ticket

ISSUE: Every department has to cut 15% from its budget.

ACTION PLAN: Do a thorough risk assessment before making any cuts. Risking a vulnerability in order to save money would be foolhardy – and, in the long run, expensive.

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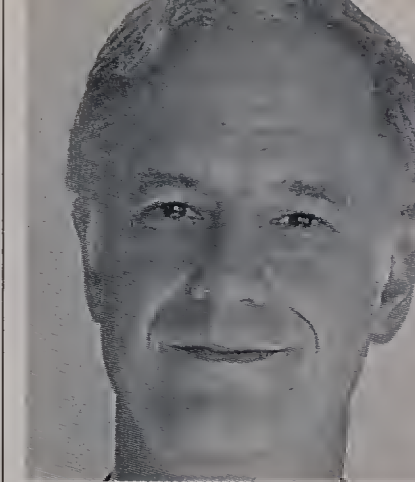
■ OPINION

Bart Perkins



Boutique Bound?

AS A RESULT of the shaky economy, many IT professionals have recently lost their jobs, and more layoffs lurk ahead. Many tech workers will consider joining or forming small boutique consulting firms with staffs ranging from one to 50 employees.

A boutique is riskier than an established consultancy. Boutiques (particularly those with only one or two people) may not have established clients, methodologies or administrative processes. Worse, they may not have the resources to train new employees who have limited consulting experience. Before joining or creating a boutique consulting firm, consider these aspects:

■ **Services offered.** Successful boutiques deliver a small number of very-high-quality services. (Even large consultancies cannot deliver every possible service.) Focus the firm on industries and services where the staff has expertise. Resist the urge to tell potential clients you can address any IT issue.

■ **Business development.** No consultancy can exist without clients. Most boutiques struggle to build enough market awareness so that potential clients know they exist. Often, when people start a firm, friends hire them. This will jump-start a boutique, but it won't create a sustainable company. The firm must learn to identify potential business opportunities and close deals with strangers. If you hate the selling process or quake at the thought of making cold calls, avoid boutiques.

■ **Hands-on expectations.** Executives who become consultants sometimes want to offer advice based largely on their experience. Sustainable boutiques must move beyond armchair consulting. Although experience provides valuable perspective, clients also expect consultants to base their findings and recommendations on rigorous analysis. Some former executives are unhappy with the required attention to detail.

■ **Idea acceptance.** In most large organizations, middle managers scramble to implement senior executives' ideas, even half-baked ones. Boutique consultants can't force clients to implement their ideas; they must sell them. This requires collaboration with the client and a willingness to have your ideas modified. If your ego can't handle that, stay away.

■ **Most boutiques take the position that if you want a staff meeting, look in the mirror.**

■ **Delegation.** Because boutiques rarely employ junior consultants and usually have limited administrative help, delegation may not be an option. Boutique consultants must be proficient with Excel and PowerPoint and willing and able to write their own reports. Most boutiques take the position that if you want a staff meeting, look in the mirror (and hope that you don't get into an argument).

■ **Status.** Some people who choose boutiques find that they miss the status and perks of a large organization. Corporate executives will miss having an executive assistant. Few clients provide support to consultants beyond basic levels. Expect cramped office space with inconsistent network access. Don't expect the client to take you to dinner. Instead, expect your schedule to be inconveniently rearranged on short notice. (Learn to love travel Web sites.) Boutique consultants are at the bottom of the pecking order. Avoid disappointment by adjusting your attitude accordingly.

■ **Financial impact.** With lower overhead than bigger consultancies, boutiques are very profitable when everyone is working on billable projects. But boutiques may experience large cycles of feast and famine, and most have limited funding to pay the staff during idle periods. Be prepared financially.

■ **Exit strategy.** Some boutiques are organized around the owners' lifestyles, and these intentionally remain small. In other cases, the owners hope to grow and sell the firm. If the boutique is ultimately sold to an established consultancy or to younger partners, the change will create opportunities and challenges. Be sure you understand the owners' growth plans and time frames before joining.

Boutique consulting firms offer tremendous opportunities for IT professionals, but they also present unique challenges. Gather plenty of data and thoroughly research the associated challenges and opportunities before deciding if you're boutique bound. ■

Bart Perkins *is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.*

MARKETPLACE

Career Watch

■ **Q&A**

Steve King

The president and CEO of **Virtela Communications Inc.** has advice for any would-be entrepreneurs considering marketing their own high-tech gadget or launching an IT service.

What mistakes do first-time tech CEOs commonly commit when launching a business? The No. 1 mistake is trying to do too much too soon early in the life cycle of a company. The customer's strategy must drive the company's strategy. You should find a beachhead and stick to it. Be laser-focused on where you can build a complete product for a segment that's going to buy it.

Another thing that's difficult for the first-time CEO is getting unfiltered information from the organization.

What do you mean? You're getting good news all the time or bad news all the time, depending on who you're getting the information from. It's not unfiltered data that you can analyze. You're not always getting the straight scoop from your team because either they're intimidated or they don't want to give you bad [news]. You want raw, unfiltered data, because you can react to that and integrate it into your analysis.

What advice would you offer aspiring technology entrepreneurs, particularly those with a predominantly technical background? First and foremost, you've got to surround yourself with a strong team. If you have a technology background, you need to have a partner with a product marketing background. And finding really strong product marketing talent is not easy. It isn't necessarily true that if you build the right product, the world will beat a path to your door.

What else should entrepreneurs focus on? Building a team that's focused on the market that they're pursuing. Being the CEO of a technology start-up is really difficult. You have to focus your attention on so many areas: investors, industry analysts, the media. You have to make sure you're applying enough bandwidth to all of those areas as a CEO. It's not for everyone.

– THOMAS HOFFMAN
(tom_hoffman24@gmail.com)

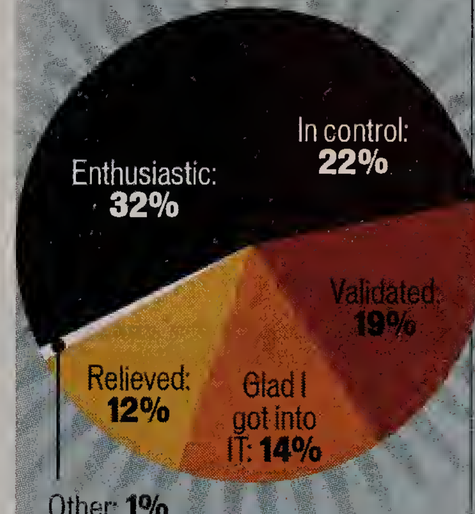
PAGE COMPILED BY JAMIE ECKLE.

Who Are You?

Survey finds IT pros worldwide hate workplace politics – and love the History Channel

Having an aptitude for technology seems like a good prerequisite for an IT professional, but how about having a thing for the Eagles song "Hotel California"? Both show up as common attributes in a wide-ranging survey conducted by online community ITtoolbox and PJA Advertising & Marketing. Besides asking about the work-related issues below, the survey pried into areas like favorite books (The Bible was No. 1, followed by the Harry Potter series, but business titles like *7 Habits of Highly Effective People* and *The World Is Flat* also made the top 10), consumer technology that IT pros would most like to own (Blu-ray players), politics and preferred TV channels (the History Channel was No. 1, followed by CNN and ESPN). When it comes to favorite songs, the respondents showed a clear preference for hits from the '70s and emo; the only contemporary songs in the top 10 were two by Coldplay. No. 8, Pink Floyd's "Comfortably Numb," was perhaps the response of several hundred people who thought they were answering the question, "How do you feel when things are going well at work?"

How do you feel when things are going well at work?



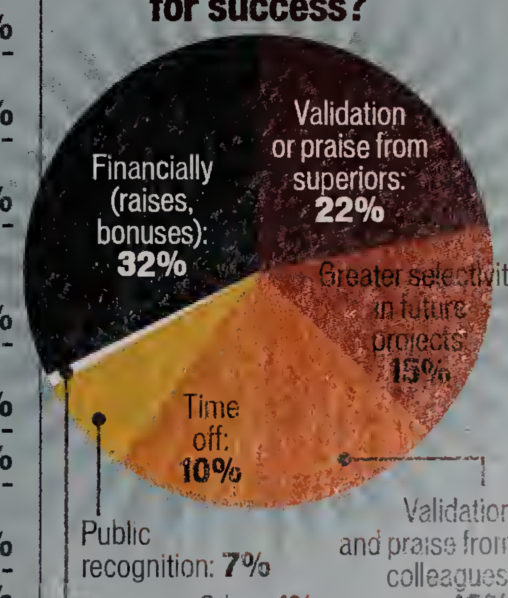
Which of the following best describe how you ended up with a career in IT?
(Choose up to three.)

I had an aptitude for technology as a kid	53.5%
I just found myself in the field	39.5%
It was my major in college	32.7%
I've always been more left-brain than right-brain	22.3%
A friend encouraged me to look into IT	13.7%
It felt like a safe choice	12%
My parents influenced my decision	6.4%
I don't remember	5.8%

What are the biggest headaches you experience at work?
(Choose up to three.)

Company politics get in the way of good decision-making	51%
I'm putting out fires instead of setting strategy	40%
Technology doesn't work as promised	37%
I am not provided with the tools I need to be most efficient	25%
My deadlines are unrealistic	20%
Vendors are always trying to sell me something	19%
I spend too much time managing my infrastructure	18%

How do you most like to be rewarded for success?



SOURCE: 2008 ITTOOLBOX/PJA IT SOCIAL MEDIA INDEX, WAVE III, A SURVEY OF 2,935 IT PROFESSIONALS FROM 109 COUNTRIES; JULY 2008

Computer Applications Specialist (Anderson, SC): Responsible for proper sizing, installation and day-to-day operations of multiple hardware and software platforms in addition to ensuring proper functioning of the hardware and software. 4 years of experience in a related systems analyst, programming, or network/computer systems administration position. 4 years of experience must include experience in HP3000, AS400, Windows NT Server, Microsoft Office, Word, Excel, Outlook, Access, Power Point, TAM (Tenant Accounting Software). Mr. Chad Brooks, McAlister Heating & Air Conditioning, Inc., 4440 Highway 24, Anderson, SC 29626.

Senior Analyst (NY, NY): Identify & execute analytic reqmts, deploy & suppt Lattice solutions & deliver bus insights from professional services engagemts. Customer facing role w/travel req'd. Min Reqmts: MS in Math, Physics, Economics Engg or rel & demonstrated exp 1)w/ BI tools (i.e., Excel pivot tables); & 2) w/ statistical model'g (i.e., regress'n, decision tree) & w/programm'g languages (i.e., HTML, CSS, PHP, MySQL, C++, Java) for sw applic & user-interface dsgn. Send res to Tom Ebling, CEO, Lattice Engines Inc. 281-283 Franklin St, Boston, MA 02110, w/ref to job Code: LE1208. No calls please

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TRUE TALES OF IT LIFE AS TOLD TO SHARKY

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This IT shop has a minicomputer that keeps failing for no apparent reason. "This had been going on for three months," reports a pilot fish on the scene. "Engineers had been out to check the machine and could find nothing wrong. One day, I was working behind the computer and touched the main 400-volt connection – and shot two feet backward. I then went back into the office, shaking my hand to remove the tingling sensation, and proceeded to tell my boss that I now knew what was up with the computer. An engineer came out and swapped the power supply unit, and the problem never appeared again. And the comment from my boss? 'If you had been really badly electrocuted, we would have taken you outside, put you up against a lamppost and sued the city.' "

Baby, It's Cold Inside

Flash back to the 1960s, when this pilot fish is a part-time computer operator at his university. "The computer center was in an annex off the engineering building," says fish. "We had three computers – an IBM 360/65, IBM 7044 and IBM 1401, which all put out a massive amount of heat and required air conditioning 24/7. Since I was a townie and everyone else was home for the holidays, I had the chore of working Christmas Eve powering everything down and reopening at 6 a.m. on the 26th. Christmas Eve was bitterly cold, and when I opened up on the 26th, I knew something was wrong when I could see my breath inside the computer room. When I powered up the 360/65, I was nearly blinded by red lights indicating system failures. Same with the 7044. But the trusty 1401, which was used only for I/O, powered up just fine. It served as an electronic campfire, around which I sat making desperate calls to every engineer on the call list, asking for help. Turns out that since we were operating 24/7 with huge thermal output, no one had given much thought to supplying heat to the computer room!"

Blackout

It's the mid-1980s, and the mainframe programmers in this IT shop all use green-screen terminals. "The guy next to me came in and fired up his terminal, but the screen stayed dark," says a pilot fish there. "After checking the cables, tech support determined the CRT was bad. A new CRT was brought in, and it worked. As the tech was taking away the defective CRT, he asked, 'Do you want your glare protector?' He pulled the Velcro-connected glare protector off the old CRT, and a black sheet of paper fell out from behind. We never found out who among the 50 programmers was responsible."

■ *Sharky won't tell anyone who's responsible for your true tale of IT life. Send it to me at sharky@computerworld.com, and you'll get a stylish Shark shirt if I use it.*

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Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement PM40063731. **CANADIAN POSTMASTER:** Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly, except for combined issues in November and the last week and first week of each of the following months: December/January, March/April, May/June, June/July, and August/September by Computerworld, Inc., 1 Speen Street, Box 9171, Framingham, Mass. 01701-9171. Copyright 2009 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Ray Trynovich, Computerworld Reprints, c/o The YGS Group, Greenfield Corporate Center, 1808 Colonial Village Lane, Lancaster, Pa., 17601. (800) 290-5460, Ext. 148. Fax: (717) 399-8900. Web site: www.reprintbuyer.com. E-mail: computerworld@theygsgroup.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy: U.S. – $99.99 per year; Canada – $130 per year; Central & So. America, $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll-free (888) 559-7327. **POSTMASTER:** Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

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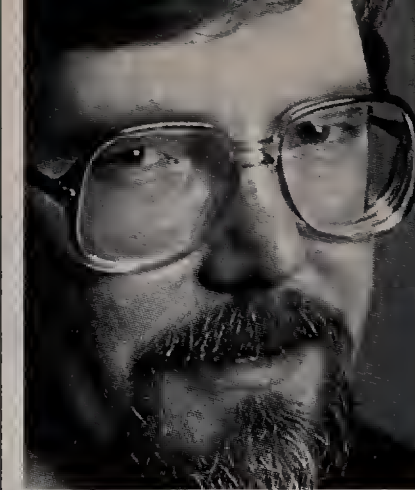
FRANKLY SPEAKING

Frank Hayes



More Than a List

OH, NOT AGAIN. Last week, the SANS Institute and Mitre released yet another list of the most serious programming errors that break software security. And this time, SANS and Mitre got dozens of other organizations to sign on, including Microsoft, Apple, Oracle, Tata, Symantec, the Department of Homeland Security and the National Security Agency.

But no matter how good it is, a list won't solve this problem.

Yes, it's a fine list. It includes all our old favorites: overflowing buffers, unchecked input, random numbers that aren't really random, failure to block cross-site scripting and SQL injection. (You can find the complete list at *www.sans.org/top25errors.*)

Trouble is, we've seen lists like these before. Security groups have been issuing them for decades — and nothing much has changed.

SANS and Mitre say this one is better, because this time they tapped dozens of other organizations to help compile the top 25 programming problems. Surely that will convince programmers to see the error of their ways and start coding securely, won't it?

No, it won't. Programmers who care about security don't need this new list. They already know about these problems and work to avoid them.

And programmers who don't care about security won't even notice the new list. They figure security is somebody else's job.

But this list isn't a complete waste. There's the germ of a new idea here — and if we're really lucky, SANS and Mitre will make it a reality.

One of the goals for this new list is that big software buyers will be able to use it to improve software quality. For example, SANS says some state governments are already thinking about requiring software suppliers to certify in writing that their code is free of the errors on the list.

Self-certification? Yeah, good luck with that.

There's the germ of a new idea here – and if we're really lucky, SANS and Mitre will make it a reality.

But wait — there's no special reason why any buyer should have to trust a software provider's word that the code is clean. Why not make third-party certification the standard? Certification companies could get access to the source code, run automated code checks and provide reliable results to software buyers about how clean the code really is.

Of course, the reliability of those third-party certifiers would depend on the quality of their test suites. If every certifier gins up its own tests, that quality could be all over the map.

But it doesn't have to be — not if SANS and Mitre and their partners sponsor development of a standard test suite and then make it freely available.

Think about it. Those third-party certification companies would gladly use that test suite, because the certifiers would be off the hook for any top-25 errors the test suite fails to find.

Software providers would happily use the test suite to make sure their code would achieve third-party certification on the first pass.

Security companies would fall all over themselves to discover top-25 errors that could get past the test suite. They'd issue their press releases, the test suite would be updated, and the new version would be the new standard.

Companies that currently make software testing tools? They could integrate the top-25 test suite with their own products, which customers would still buy for all the other code problems that those products catch.

And corporate IT shops that think they can't afford testing tools? They'd have no excuse not to use the free top-25 test suite.

Developing that suite wouldn't be easy — technically or politically. But SANS and Mitre have already lined up the big players who can help make it happen. This is their chance to make more-secure software a reality.

That would sure beat yet another list. ■

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